

Intermontanus

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NEWS & ANNOUNCEMENTS

ANNUAL AMPHIBIAN COUNT

With this year's amphibian count will be the beginning of a long term project to survey the amphibians of Zion National Park. The park has solicited our assistance in monitoring amphibians through spring surveys. We will use simple, standard methods to survey specific streams within the park for six amphibian species. Even if you cannot identify any amphibians you are welcome to participate in the survey.

This year the survey will be held on 5-7 May. Actually plans are to leave from Salt Lake on Thursday afternoon (4-6:00). Thursday night will be spent learning to identify amphibians by both sight and by their call. Friday will be spent hiking in the park and surveying for leopard frogs and canyon treefrogs. Friday night we will complete a nighttime stream survey. Saturday will be spent much like Friday, but in different areas.

Depending on the number of people participating we will either camp in the research camp or in the regular campground. Carpooling will be available and is encouraged. Those unable to leave on Thursday are welcome to drive down on Friday. We will be camping and participants will be responsible for their own food, gear, etc.

If you plan to participate, please contact Breck Bartholomew (801-752-0297) as soon as possible.

EDUCATION MEETING

The Education Committee has organized a meeting for the general public on keeping amphibians and reptiles. The meeting will be held in the auditorium at the Monte L. Bean Museum on the Brigham Young University Campus on Saturday March 25th at 2:00. Anyone interested in helping the committee with the running of this meeting should contact David Webb @ (801) 224-4001.

UTAH AMPHIBIAN & REPTILE LAWS REVISED

The Wildlife Board has accepted revisions of Rule 657-3, Collection, Importation, Transportation and Subsequent Possession of Zoological Animals (CIT). The amphibian and reptile sections contain relatively few changes and few people will be affected by the additions. The new CIT is much more clear and allows individuals to obtain a variance to the laws in special circumstances. Originally the CIT was going to allow an individual to request a species be reclassified (i.e., from prohibited to controlled or visa-versa), but at the last minute the DWR added a \$200 fee for this action thus virtually eliminating the possibility. The \$200 fee is supposed to cover their expenses which would be incurred while researching the classification of the species (i.e., doing their job). However, the procedure for this type of request states that the requestor will provide all of the research documentation. Clearly the DWR has added the fee as a deterrent to individuals and not to cover their costs.

Specific changes to the amphibian and reptile sections include: Collection: Boreal toad (*Bufo b. boreas*), lowland leopard frog (*Rana*

yavapaiensis), and relict frog (*Rana onca*) are added as prohibited. Northern leopard frog (*Rana pipiens*) has been added as controlled. Bullfrog (*Rana catesbeiana*) and green frog (*Rana clamitans*) must be killed on site if they are collected. Individuals may now collect any number of side-blotched lizards (*Uta stansburiana*) and western terrestrial garter snakes (*Thamnophis elegans*). Texas spiny softshell, (*Apalone spinifera emoryi*) and Snapping turtle (*Chelydra serpentina*) must be killed on site if they are collected.

Importation: Spotted frog (*Rana pretiosa*) are now prohibited. Lowland leopard frog (*Rana yavapaiensis*), Northern leopard frog (*Rana pipiens*), relict frog (*Rana onca*), and western toad (*Bufo boreas*) are added as controlled. Texas spiny softshell (*Apalone spinifera emoryi*) is added as prohibited.

Propagation: We proposed that the section allowing for the propagation of some controlled snakes be deleted. Our recommendation was supported by the DWR, but the Wildlife Board opted to leave the section as is.

These changes are substantially fewer than originally proposed by the DWR and they should be thanked for listening to our comments during the last few months. The new laws, however, still illustrate the DWR's philosophy that most, if not all, herpetologists (private and academic) can not be trusted. The DWR feels that anyone interested in herpetology is going to relocate animals and try to introduce nonnative species. They also feel that no one can be trusted to study Utah's herpetofauna without obtaining a COR, which they are reluctant to give to anyone. I honestly don't know where this attitude has originated nor how to combat it, but my best guess is that we show them, beyond any doubt, that we are responsible and professional.

The CIT will be up for revision in another five years ±, and we should be prepared for it. Let's make it a goal to abide by the laws as they are written. We cannot afford to have anyone break the law, this will be devastating to our attempts to make the laws more robust. Not breaking the law includes not releasing any animals into the wild. It is a class A misdemeanor to release any animal into the wild, including that garter snake you collected last month. If you have animals you wish to get rid of call UtAH, we'll find a home for them. In fact we may wish to start an adoption committee (anyone interested in doing this?). In addition to abiding by the laws, we can study Utah's amphibians and reptiles and publish the results. Information tucked away in your field notes, or worse your head, doesn't do anyone any good. There are a number of places to publish your information (magazines, journals, etc.), and *Intermontanus* is a good place to start. It is also important to practice good herpetoculture techniques and to publish information about nonnative species; these animals are covered by the CIT too. Help is available for those who are uncomfortable writing so there are really no excuses. Take an active role in protecting your rights to enjoy your hobbies!

SALT LAKE COUNTY PROPOSES NEW ANIMAL REGULATIONS

Salt Lake County is vying for the most absurd animal laws in the country. If you thought the DWR regulations are strict, you haven't seen anything yet. Salt Lake County's proposed laws will ban all species not native to North America and all species not commonly

domesticated! They also require PIT tags and licenses for all animals. Breeding permits are required and all offspring must be licensed within 21 days of being born. Animals must always be on a leash. Animals can not be transported in a car when the temperature is above 65°F or below 30°F. The list goes on and on. Initially it may appear that small reptiles are exempt, but the exemption is only for the number of animals you can own. Most animals are limited to two adults of a species and four total animals.

Salt Lake County does not have a public comment period for their proposed laws (actually neither does the DWR. The Wildlife Board's public comment was just a front; nothing was considered because they had made up their minds beforehand), so we'll have to work hard to get things changed. By the time this newsletter is printed UALPA will have had an initial meeting with the county and we should have a better idea of what we are up against.

It appears some animal rights groups are behind the proposed law and we may have a difficult time getting things changed. If you are interested in getting involved in protecting the rights of people to own animals you can contact UALPA at P.O. Box 356, Kaysville, Utah 84037.

The Declining Amphibian Population Task Force office operations, which include serving as the central communications point for Task Force members, maintaining the amphibian decline database and producing FROGLOG, cost only about \$50,000 per year. This has been successfully met with funding from foundations. Although many of these foundations are interested only in one time funding and one has indicated it cannot continue its present level of funding,

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Intermontanus

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we believe this can be dealt with.

Our priority now is to reestablish the Seed Grant Fund which is indispensable to the achievement of our goals. Some of the important progress to date stems from these grants, which have enabled Task Force Members to explore the relationship between disease, stress, and temperature; UV-B radiation and amphibian declines; and to monitor populations.

Foundations supporting our work require a showing of diversified support. We are now looking to individual donations as a primary source of funding for the Seed Grant Fund. This letter is the first in an annual appeal for funds to support the Task Force.

The continued production of FROGLOG, as well as all our other activities, rests on our ability to demonstrate we have a program which stimulates progress in our work. Your support is the tangible vote of confidence which will play a vital part in assuring that the effort goes on.

Those wishing to support the Declining Amphibian Population Task Force may send donations to Ronald Heyer, Chair, DAPFT, NHB mail stop 180, Smithsonian Institution, Washington, DC 20560.

SPECIAL OFFER TO ALL STUDENT HERPETOLOGISTS!

As an incentive to join the society and attend its August meeting, SSAR is making a special offer. All student SSAR members who register for and attend the August 8-13, 1995 meeting in Boone, North Carolina, will receive a free copy of Pritchard and Trebbau's classic, "The Turtles of Venezuela," published by SSAR in 1984. The list price is US\$45. This 414-page, clothbound book contains 48 color plates (25 watercolor portraits and 165 photos of turtles and habitats), with keys and spot distribution maps. This book is an exhaustive biology and natural history of the turtles of northern South America and covers fully half of the turtle species on the continent.

Dr. Peter Pritchard will be in attendance at the meeting and has kindly agreed to autograph copies on request.

In order to take advantage of this one-time-only offer, you must already be a student member of SSAR or join before the Boone meeting. The special student membership rate is still only US\$25, which entitles you to receive *Journal of Herpetology* and *Herpetological Review* (4 issues of each per year) plus get pre-publication discounts on other SSAR publications. Send dues to Karen L. Toepfer, SSAR Treasurer PO Box 626, Hays, Kansas 67601-0626, USA.

When you register for the meeting, please mark the student box and indicate that you want a copy of "Turtles of Venezuela," so that we can have the proper number of copies shipped to North Carolina for distribution. The deadline for requesting the book is 1 July 1995.

NEW PUBLICATIONS

The Society for the Study of Amphibians and Reptiles (SSAR) has announced plans to reprint *The Lizards of Australia and New Zealand* by John E. Gray and Albert Günther. This Book represents the first monograph dealing exclusively with the herpetofauna of Australia and New Zealand. It consists of two separate but related works that share the same set of plates. The first of these, by Gray and Günther, was issued in two sections (1845, 1875), as part of the scientific results of the voyage of H.M.S. *Erebus* and *Terror*. This is the first comprehensive review of the lizards of Australia and New Zealand and gives the scientific name, synonymy, description, and distribution of each species. Many new species are described for the first time. The second work being, reprinted in this volume is Gray's monograph, "The Lizards of Australia and New Zealand in the Collection of the British Museum" (1867), which is also a checklist containing the basic details of each species.

The outstanding feature of this reprint are the 20 lithographic plates, drawn by G. H. Ford, staff artist at the British Museum and one of the best natural history artists of the 19th century. These

plates illustrate monitors, pygopodids, geckos, skinks, agamids, and one of the tuatara, which was then classified as an agamid lizard. These exquisite drawings are among the most detailed and lifelike ever produced on the Australian and New Zealand herpetofaunas. They represent the first published illustrations of many of these species, including the tuatara. Half of the plates illustrate single animals in natural poses, whereas each of the others have as many as 15 figures.

Because these plates are of such exceptional quality, complete sets are being made available separately, printed on one side only of a heavy, acid-free paper stock. These plates measure 8 1/2 x 11 inches and are suitable for framing.

Specifications: 80 pages, 20 full-size plates. Format 8 1/2 x 11 inches (21.5 x 28 cm). Clothbound. To be published June 1995. \$16.00 for SSAR members before publication, Institutions and Nonmembers \$20.00. Set of 20 plates, in protective plastic wrapper \$12.00. Shipping in USA, add \$2 Per copy;

Send orders to Robert D. Aldridge, SSAR Publications Secretary, Department of Biology, St. Louis University, 3507 Laclede Avenue, St. Louis, Missouri 63103, USA. Please make checks payable to "SSAR." Orders may be charged to MasterCard or VISA (account number and expiration date must be provided). Membership details and a complete list of SSAR publications can be obtained on request to Dr. Aldridge.

Chapman & Hall recently published the book *Health and Welfare of Captive Reptiles* edited by Clifford Warwick, Frederic L. Frye, and James B. Murphy. This clearly written, comprehensive volume fully examines the welfare of captive reptiles and explores the implications of captivity, general husbandry and research programs. The editors, acknowledged experts in this field, have drawn together an impressive international group of contributors in discussions of reptilian physiology, physical and psychological stress, diet and normal behavior. This unique book also considers veterinary and environmental issues, as well as the value of informed design in research.

The book contains 300 pages, 15 illustrations and three halftones. The cost is \$75.00. Send orders and inquiries to C. Rohlfs, Chapman & Hall, 115 Fifth Ave., New York, NY 10009.

The British Herpetological Society recently published a compilation of over 50 articles on captive care and breeding of amphibians and reptiles originally published in the *British Herpetological Society Bulletin* 1980-1992. The book, *Breeding Reptiles & Amphibians*, contains 16 articles on Lizards, 13 on snakes, 7 for crocodilians and turtles, and 18 amphibian articles. In the U.S. the book is available from Serpent's Tale and Bibliomania. Suggested retail is \$45.00

Burghardt and Rand's classic book *Iguanas of the World* has been reprinted in a limited addition of 100 copies. Individuals wishing to own this book should purchase it soon. It is available from Serpent's Tale and Bibliomania. Suggested retail is \$70.00.

LETTERS

The following letter is reprinted from The Herptile (Journal of the International Herpetological Society) 19(4):143.

Dear Sir/Madam

Having been involved with gundogs for the past twenty years or so, I have, in the last five years also become very interested in keeping booids, and I have had success in keeping and breeding from these wonderful creatures.

The point which I would like to make is that although there are "cowboys" in all aspects of life the main gundog breeders/handlers will tend not to sell unhealthy, unfit animals for fear of damaging their valued reputation. However in my experience over the past several years it appears that a large percentage of supposedly reputable reptile dealers have only one thing on their mind, and it

is certainly not the interest of the animals in which they are dealing!

This letter is not specifically set out to point fingers, but surely it is time that someone had the honesty to speak the truth, even if it is an amateur.

Carey Scott, "Eckvale," (North Flatt), Sandbank, Dunoon, Argyll, Scotland.

HEADLINE HERPS by David Webb

Not Charmed

* Virgie Scott, 44, has filed notice of intent to sue the Burnet Park Zoo in Syracuse, N.Y., for \$100,000, claiming she suffers post-traumatic stress disorder because curator Roger Clawitter chased her with a 10-foot boa constrictor. Clawitter says he was merely carrying the snake when Scott became irrational; and ran away. [USA Today, Friday, January 13, 1995]

* Gravatai, Brazil postal workers received a surprise in the form of a 5-foot boa constrictor that slithered out of a mailed box. Postal employees panicked and called Mauro Ferreira of the Gravatai fire department. "Oh, he wasn't such a bad snake," said Ferreira. Clotilde the boa spent 17 days in the package mailed from an army post 2,500 miles away in the Northern amazon jungle state of Para. Clotilde belonged to a soldier who was recently transferred. His buddies helped him pack and slipped the boa into one box he mailed. [The Daily Herald, Thursday, January 5, 1995 and Deseret News, THURS/FRI, January 5-6, 1995]

Sunny side up?

A Miami, Florida couple, Daniel Gonzalez, 65 and his wife, Frances, 39, were sentenced to six months of house arrest for importing and selling sea turtle eggs at their restaurant. The eggs were from a family of turtles classified as endangered. [USA Today, Friday, February 10, 1995]

Snakey Smugglers

* A Parma, Ohio man is accused of illegally importing snakes and other reptiles to sell in the United States. After an investigation by U.S. Fish and Wildlife Service officials, Edmund Celebucki, 40, was charged in an information a statement of charges filed without a grandjury's review with conspiring to violate federal laws regulating the importing of protected wildlife from foreign countries. His lawyer, Jerome Emoff, said Celebucki is not a major player in the alleged smuggling scheme. "There are figures more elaborately involved than Celebucki was in terms of the commercial aspect of the claims, although they are not named in this information," Emoff said. [Trentonian Times, Trenton, NJ. Submitted by Louis W. Porras]

* Stockholm, Sweden custom officers noticed "something weird" about a woman's bosom. During a body search they found 65 baby snakes in her bra. The 42-year-old unidentified woman told the officers that she intended to start a reptile farm. [Trentonian Times, Trenton, NJ. Submitted by Louis W. Porras]

Legislature Herpetology

Arizona Rep. Jeff Groscoft is father of a bill to force the state Game and Fish Commission to change a rule and allow Gila monsters to be bred in captivity and sold. Linda Valdez, an Editorial Writer for The Arizona Republic, doesn't like Groscoft's plan and was quick to point out the flaws in it. Apparently Groscoft believes allowing breeding and selling of the Gila monster will stop poaching of the protected lizard. Valdez points out that once it's legal to breed Gila monsters in captivity, there would be a rush to collect wild specimens for breeding stock. Groscoft suggests legal captivity animals could

be identified by injecting microchips into them. Valdez's reply is don't be suckered by that. It would be impossible to prevent poachers from taking more animals from the wild and injecting them with a chip. In Valdez's article Arizona Fish and Game herpetologist Jeff Howland says release of captive-bred lizards poses dangers to the native populations. These lizards could carry exotic diseases into an ecosystem where the inhabitants have no immunity. [The Arizona Republic. Submitted by Hans Koenig]

Sewer Snakes

City Towers estate condominium residents in Singapore have reported seeing a snake with "a head about the size of a fist" popping out of their toilets. The first sighting was reported two years ago by resident Indira Damodaran. "We've been pouring sulfur religiously into the toilet bowl, hoping to drive it away," she said. The most recent sighting occurred on Feb. 19, 1995. Francis Lim, assistant curator at the Singapore Zoo, told UPI it was possible that snakes had made their way into the island city-state's sewer system and from there were crawling into household toilets. Lim believes the snake may be a reticulated python based on the residents' descriptions of "a gray snake with spots" and "a brown one with stripes." [Deseret News, WED/THURS, February. 22-23, 1995]

More Salmonellosis

Utah newspapers are again reporting more cases of salmonellosis in young children who may have picked up the bacteria from iguanas or savannah monitors. Utah Department of Health epidemiologist Craig Nichols said the strains of salmonella that infected the children aren't commonly found in Utah. Deaths from salmonella are uncommon, however, the resultant diarrhea and loss of appetite can lead to severe dehydration in young children. According to Nichols, a 4-year-old Salt Lake County victim had to be hospitalized. "We don't think exotic lizards should be kept in a household with small children," said Nichols. Breck Bartholomew, founder of the Utah Association of Herpetologists, believes reptiles are safe pets if owners are careful to keep cages clean and wash their hands. "The number of people with small kids that have iguanas and never had a problem is fairly significant," he said, "I would hate to see them say, if you have small kids, you can't have an iguana." Nichols recommended that reptile owners make sure children are not exposed to the animals. Handlers should thoroughly wash hands and disinfect surfaces the reptiles touch. "You shouldn't let reptiles crawl around your house if you have small children. They can contaminate carpets and floors," he said. [The Salt Lake Tribune, Deseret News, and The Daily Herald, Wednesday, February 22, 1995]

Hogle Zoo receives iguana

An illegally imported iguana that was confiscated by Customs officers at Salt Lake International Airport has been given to Utah's Hogle Zoo. A child purchased the 13-inch iguana in Mazatlan, Mexico and hid it in his lunch box. When his parents discovered it, they relinquished it to custom officials. Transportation of animals to the United States is illegal without approval of the U.S. Department of Agriculture or the U.S. Fish and Wildlife Service. Hogle Zoo marketing director Andrew Wallace said the iguana is healthy and after a brief quarantine will join the zoo's reptile collection. "...the iguana, I hope... people will realize that importing animals into the country is illegal. Purchasing animals from illegal vendors contributes to the black market and encourages continued decimation of the wild population," LaMar Farnsworth, zoo director, said. [Deseret News, Friday, January 27, 1995 and The Salt Lake Tribune, Saturday, January 28, 1995]

Snake Thefts

Rochester, N.Y., police are investigating the theft of 50 exotic snakes worth thousands of dollars from the Reptile Showcase pet show. All the snakes - including boa constrictors, pythons and king snakes - are non-poisonous. [USA Today, Friday, February 3, 1995]

HUSBANDRY & HERPETOLOGY

UPDATE ON HOGLE ZOO'S *CROTALUS VIRIDIS CONCOLOR*

On 13 July 1994 *The Salt Lake Tribune* announced that Hogle Zoo's female *Crotalus viridis concolor* (midget faded rattlesnake) had given birth to five neonates. This was the first time known that *C. v. concolor* has been successfully bred and given birth in captivity. The parents were collected as neonates in the fall of 1988; making them six years old at the time of breeding. Very little is known about reproduction or age at maturity in the midget faded rattlesnake. Snakes in captivity often reach sexual maturity at an earlier age than in the wild.

Crotalus viridis concolor is a true native of Utah with more than 90% of its distribution range in this state (Glenn and Straight, 1982). The midget faded rattlesnake is confined to the Colorado and Green river drainages. Their venom has a neurotoxin, similar to the Mojave rattlesnake (*C. s. scutulatus*), but these snakes are generally docile and human fatalities from this species are unknown (Glenn and Straight, 1993).

Crotalus viridis concolor is a unique animal to Utah and should be allowed to live peacefully without human interference. If you see a midget faded rattlesnake or any other rattlesnake in the wild do not attempt to capture or harass it. If you are interested in rattlesnakes, simply observe the animal from a safe distance and write down any observations you think are interesting. Very little is known about midget faded rattlesnakes, so just about any observations can have importance.

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Robert Nohavec
Salt Lake City, Utah

FEATURES

CHRISTY'S HALLUCINATION

We were looking for fossils. The last thing I expected my 9th graders to find was reptiles, so I hardly took notice when Christy shrieked "Snake!" But when I looked up the hill to see Amelia frantically turning rocks, I had to wonder.

March 2nd was a chilly day in Logan Canyon. Under cloudy skies and with a cool breeze blowing, our hands were cold as we combed the slope for ancient corals and brachiopods.

"Christy, you didn't **really** see a snake, **did** you?"

"Yes! It crawled under those rocks!"

"Christy, are you **sure** it was a snake?"

"Yes! I saw it!"

At this point, I was at least convinced that she **thought** she'd seen a snake, so I scrambled the few feet to where Amelia was busily removing rocks from around a sagebrush, in search of Christy's hallucination. Two feet from where she worked, I stared

disbelievingly at a chocolate-brown adult rubber boa, sitting coiled on the surface. Picking it up I asked, "Is this it?"

"(Shriek). No! The one I saw crawled under those rocks!"

Handing my specimen to Amelia, I finished her work for her and found the original animal retreating into the spaces between the half-buried limestone blocks. A nearly identical twin to the one already in hand.

It was a Biology teacher's dream — an unexpected discovery on a natural history field trip. Were we on top of a den site? Had the snakes been preparing to mate, or perhaps just finished? Their close proximity to one another seemed more than coincidental. Several things were surprising about our find:

1) **It was cold.** The Logan papers reported a high in the low 50's, but in the canyon at 12:30 p.m. with the wind blowing, I'd put the temperature in the upper 40's

2) **It was early.** Even with the early onset of spring-like weather in northern Utah, March 2nd seemed a bit premature for rubber boa activity. And they *were* active. One of the specimens was crawling about when first observed, and the other was sitting out, though loosely coiled.

3) **They were a deep chocolate brown color.** The many specimens of *Charina bottae* that I have observed in this area have been tan to light olive. The belly scutes were the usual yellow, though it seemed unusually bright in contrast to the dark dorsal scales.

Though the specimens and the circumstances seemed unusual, the habitat was classic for *Charina bottae*. A rocky, south facing slope, where the toe of a large rock slide merged into a scrubby maple forest. The terrain was steep, with about an equal mix of blocky limestone, soil, and leaf litter. Dry, but in proximity to water with an embayment of the Logan River about a hundred yards below.

After all the students who wished to experience the pure joy of handling one of Nature's sweetest creations, we released both specimens where they were found. The best kind of learning experience for all!

Paul Jamison
Logan, Utah

FOOD AND DRUG ADMINISTRATION BANS IGUANAS AND MONITOR LIZARDS FROM PET TRADE

No, the Food and Drug Administration didn't really ban iguanas and monitors... yet. But there has been an alarming number of news reports and health alerts warning that lizards carry *Salmonella* and it wouldn't surprise me if a ban is suggested in the near future. Reports of lizard-associated salmonellosis are varied and increasingly frequent:

- 22 February 1995: The Utah Department of Health announced that there have been a few cases of salmonellosis in which lizards were involved.
- January 1995: The State of New York issues health alert to reptile owners about *Salmonella* after infant's Death (Anonymous 1995a).
- October 1994: Several cases of salmonellosis involving reptiles are reported in Ohio (Anonymous 1995b).
- Winter 1994: State of California - Health and Welfare Agency issues memo entitled "Salmonella and Reptiles" which discusses 22 cases of salmonellosis attributed to reptiles (Jackson 1994).
- September 1992: Utah Department of Health publishes report entitled "lizard-associated salmonellosis—Utah" in the Journal of the American Medical Association (Lanser et al. 1992)
- February 1992: Indiana Center for Disease Control publishes report of iguana-associated salmonellosis in the Journal of the American Medical Association (Anonymous 1992)
- 1992-1995 Herpetoculture magazines and regional societies increasingly report on *Salmonella* and health concerns for the herpetoculturist.

These are just the reports I am aware of; certainly many more

exist. But why am I concerned? *Salmonella* is known to be carried by most reptiles (as well as many other animals) and can potentially cause serious health problems and rarely even death. Shouldn't people be aware that their animals could transmit *Salmonella* to humans? The answer is of course they should know this, however the way we are spreading the word is what worries me.

Thirty years ago baby turtles were the pet trade fad. People could buy hatchling turtles at most department stores and virtually all pet stores for literally pennies (<\$2). Turtles were so cheap and cute that millions were sold every year to people who really didn't know the first thing about caring for reptiles. Many of these turtles were purchased for children, a few of whom eventually got salmonellosis. Reports of turtle-associated salmonellosis became relatively common. The media, with their usual concern for the public's well being, jumped on the story causing people to panic. Baby turtles were flushed or released by the thousands, not only because of the *Salmonella* threat, but because their owners didn't expect the turtles to grow-up, or they tired of them. In 1968 the State of Washington prohibited the sale of turtles that were not certified "*Salmonella*-free." By 1975 the sale of any turtle under four inches carapace length was prohibited by federal law, with a few exceptions, and Maryland, New York and New Jersey banned the sale of all turtles! Many of these bans are still in place.

All in all the four inch ban seemed to work. Its premise was that children couldn't put large turtles into their mouths, thus reducing the transfer of *Salmonella*. The actual reason the ban worked, however, was more likely because it halted the mass sale of turtles to uninformed pet owners.

In more recent times, reptiles and amphibians have become very popular in the pet trade once again. Instead of just baby turtles, many animals are fashionable, including iguanas and monitor lizards. Like the baby turtle fad, baby iguanas, and to a lesser extent monitors, are relatively inexpensive, cute, and readily available. Many of the people purchasing these lizards are uninformed about proper care and maintenance, thus are at a higher risk of getting salmonellosis. Unlike thirty years ago, there are now several magazines available to help educate the many budding herpetoculturists. Unfortunately, some of these magazines have recently resorted to tabloid style articles designed to excite rather than educate (e.g., Anonymous 1995a). Also, some individuals, in the interest of getting attention, admittedly lie and purposely mislead the public as to the proper care and husbandry of iguanas (Richards 1994). So once again we find ourselves in the same position we were in thirty years ago: Reptiles are *too* popular, too many reptile owners are uninformed, and in an effort to "inform" the public about potential health problems the sensational media is creating a panic situation. Hopefully it is still early in the cycle of things and if we begin working now we might be able to prevent unnecessary bans on iguanas and other reptiles.

In order to calm the imminent hysteria we must be well informed as to what the actual threat is. *Salmonella* is a type of gram-negative bacteria with over 2000 serotypes. It is commonly found in amphibians, reptiles, birds, mammals, food, etc. Over 200 serotypes

For turtle and tortoise keepers, by turtle and tortoise keepers, *The Bridge* shares practical, hands-on information from people who've successfully dealt with the health and habitat problems of captive chelonians, with occasional forays into other species of Reptilia as well. Published quarterly in March, June, September and December, *The Bridge* is available in a newsletter format either by subscription or on an issue-by-issue basis. Subscriptions are \$14/year. Individual issues are \$3.50 each (please specify which issue(s) you would like to receive: M, J, S, or D).

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have been reported from reptiles, many of which are rarely found in other North American hosts. Just like snakes, only a small fraction of the serotypes are considered dangerous to humans. And just like snakes, all serotypes are given a bad rap. The few dangerous serotypes can cause a disease called salmonellosis in both reptiles and humans as well as many other animals. Salmonellosis is characterized by gastroenteritis and diarrhea and is often misdiagnosed as the flu. Many people have had salmonellosis without ever knowing it, and still more people carry *Salmonella*. Although *Salmonella* may cause salmonellosis, it usually doesn't result in a disease in otherwise healthy animals. Chances are that if you have many reptiles, some of them are carrying some type of *Salmonella*. The same is true for birds and farm animals. Transmission can occur via a number of ways, but virtually all involve gastrointestinal tract fluids/excretion in some manner.

Salmonella is resistant to dehydration and freezing and can survive for long periods outside of a host animal. An example of this resilience and the mode of transmission is the case of an eight-week old infant that got salmonellosis from a monitor lizard. Lansen, et al. (1992) reported:

"One month before onset of illness, the family pet had been a 2-foot-long savannah monitor lizard (*Varanus exanthematicus* [sic]), which the parents reported had loose stools for the 8 months it was in their possession. In March, they returned the lizard to the pet store and traded it for [a python]. Specimens obtained from the snake and its plastic cage did not yield *Salmonella*. However, *S. poano* was recovered from fecal specimens left by the lizard nearly 3 months earlier."

"The infant had not had contact with either reptile; they were handled only by the father. Because of the height of the cage, the father had to climb in it to handle the lizard and clean the cage. He did this with bare feet, a potential means of spreading contamination in the home. Heat rocks from the cage were washed in the kitchen sink, and may have been a source of household contamination."

Exactly how the baby came in contact with the *Salmonella* will never be known, but a number of possibilities exist. One aspect of this report that is particularly disturbing is that monitor feces was still available for testing after three months!

With this basic information about *Salmonella* we can come to several common sense conclusions to help prevent salmonellosis from becoming a problem. Probably the most important thing to do is to **practice good hygiene!** Most people wash their hands after cleaning cages for obvious reasons. But many people fail to wash their hands after holding an animal. Think about it. The animal lives in a cage where it defecates. You may remove the feces, but is the animal clean? *Salmonella* has been found in shed skins, even several months after molting (Grier et al. 1993). Sure reptiles are "clean" animals, but they're not sterile. **Wash your hands** after handling any animals, cage accessories, etc.

Cages should be kept clean. Get into a routine of checking each cage everyday. Clean cages as they become soiled. Periodically disinfect cages and all accessories with a 10% solution of chlorine bleach (note, Do not use chlorine bleach for amphibian cages). Thoroughly rinse cage and all accessories to remove bleach solution. Chlorine bleach is one of the most effective disinfectants available, but prolonged use can damage some materials. Always wear gloves when using bleach and never mix bleach with anything except water. Although most bacteria and viruses are destroyed after a short contact with bleach, ten minutes has been found to be optimal for disinfecting purposes.

Don't use the kitchen for anything related to animal husbandry. Washing cage accessories in the sink can promote the spread of pathogens. Bathroom sinks and tubs should be disinfected after use for cleaning or soaking animals and their cages.

Individuals with weak immune systems, such as small children, the elderly, and immune suppressed individuals should be careful

when handling animals. Only healthy animals should be handled, if any are handled at all.

When giving a presentation using animals only use healthy animals. Animals which are under stress or otherwise unhealthy are more susceptible to salmonellosis than healthy animals. *Salmonella* is more likely to be shed (and transferred) by animals when they have salmonellosis or are unhealthy. Do not allow animals or shed skins to be handled unless facilities are readily available for participants to wash their hands.

Don't eat, smoke, or put things in your mouth while working with animals. Dedicate equipment (e.g., pens and pencils) to handling areas.

Certainly the list could go on, but everything relates to good hygiene. The question of what to do if your animal has salmonellosis is a tricky one. Some veterinarians recommend euthanasia, others will treat the disease. There are many problems with both options and neither will be discussed here. See the suggested reading for a discussion of what to do if your animal has salmonellosis. I would recommend trying to avoid the situation by purchasing only healthy animals (no matter how good of bargain the sick one is) and keeping your animals healthy. Cages should provide a low stress environment and animals should not be allowed to roam free in the house.

In conclusion, *Salmonella* is potentially serious, however reptiles are only a minor source for the bacteria. You have a much greater risk of getting *Salmonella* from other sources than from your pet reptile. Nonetheless, reptiles are an appealing target for the media and much hype will be generated around this topic. As herpetologists/herpetoculturists we should be careful not to fuel the fire. Rather than emphasize the fact that reptiles carry *Salmonella*, we should focus on good hygiene and husbandry. It is my opinion that the popularity of reptiles is at the root of the problem. Uninformed pet owners are often careless and allow their animals to deteriorate, thus increasing their risk of getting *Salmonella* from their pets. We need to make a point of contacting these people and educating them. Unfortunately, we must also educate pet store owners and employees. The task is not an easy one, but we should begin work now rather than wait until it is too late!

Note: all of the articles listed below were used in writing this article. Citing all of the articles appropriately would have made the article cumbersome to read.

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Breck Bartholomew
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HERP SONG

Note: The following song was written in the early 1970's when psychedelic toads were popular in some circles. Recent reports of people getting high off bufotenin extracted from toads reminded me of this song. The song contains several non-words for the sake of rhyme. This should in no way be interpreted as an endorsement of toad sucking. Amphibian skin secretions are toxins and are potentially deadly.

THEM TOAD SUCKERS By Billy Kent Lowe

How 'bout them toad suckers
Ain't they quog
Sittin' there suckin'
Them green toadie-frogs

Suckin' them hot toads
Suckin' them chunckers
Suckin' them leapie type
Suckin' them plunkers

Look at them toad suckers
Ain't they snappy
Suckin' them bullfrogs
Sure makes 'em happy

Them ucker-mucker toad suckers
Way down south
Stickin' them suckie toads
In they mouth

How to be a toad sucker
No way to duck it
Get yourself a toad
Rear back and suck it

BOOK REVIEWS

REPTILES & AMPHIBIANS OF AUSTRALIA by Harold G. Cogger

WOW!! Or as I said in my younger days...FAR OUT!!! I am sure that there are far more "civilized" ways of proclaiming heartfelt admiration, but these are the first things that came to mind when I first picked up this tome and started leafing through it. The amount of time and the dedication to complete this project is almost incomprehensible. The compiling of the photographs and updated text is a task that most of us would be glad to complete in a lifetime. But when you realize that this is a fifth edition, the admiration grows geometrically.

Although this is not exactly a pocket-sized field guide, I have not seen a guide of any sort better put together. The maps and descriptions are all within one page turning of the photographs of each animal. This eliminates the constant flipping back and forth between sections as in other descriptive publications. Granted, all the photos are not contest winners, but they do give a good visual idea of the looks of the general population. The descriptions are short and to the point and if that is not enough information, the reference section lists more than enough alternate sources to research.

I could go on and on about this text, but I suppose the best thing I can say is that if you have any interest in Australian herpetofauna, save your dimes and nickels and BUY this book. You will never regret a penny of the cost.

As a sidepoint, hopefully one of these days Australia will loosen their restrictions and more of these wonderful creatures will become available to the rest of the world to enjoy in person.

Stan Draper
Salt Lake City, Utah

CLASSIFIED ADS

For Sale: Meller's chameleon (*Chamaeleo melleri*), large adult male. Fantastic colors. Well established and eating very well. \$200 or will trade. Call Sean McPeak (801) 532-6451.

Wanted: Looking for a male *Lampropeltis triangulum campbelli* for loan to breed with my female. Also want a female *Lampropeltis getula nigrita* for breeding loan. Call Hal @ (801) 277-4958.

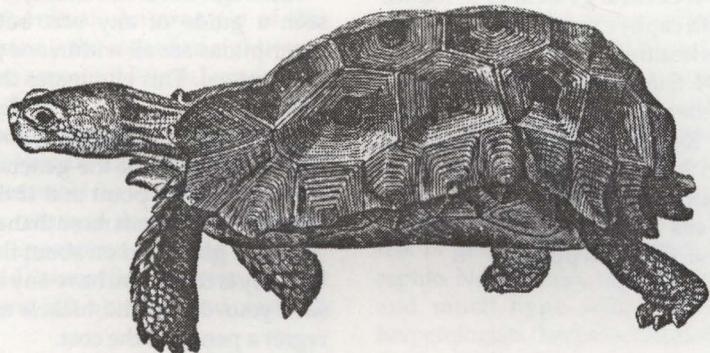
For Sale: 1.1 *Lampropeltis triangulum sinaloae* adult, proven breeders — Nice coloration. \$225 for the pair. 1.1 *Lampropeltis triangulum sinaloae* '94 offspring of above adults. Pinky feeders. \$65 each. **Free:** *Pituophis melanoleucus deserticola* long-term captive. For more details call Stan Draper (801) 364-5009, leave message.

Breeder's Monthly Journal is a monthly newspaper of classified ads for herpetoculturists. In addition to amphibians and reptiles, there are ads for breeding loans, employment opportunities, cages & equipment and much much more. Subscriptions are \$18/1 year or \$30/ two years. Copies of the March edition will be available at the next UtAH meeting. For more information write Breeder's Monthly Journal, 403 Georgia St., Vallejo, CA 94590-6004.

For Sale: "Animal Tracks" since 1986 - Complete animal management software for managing your personal animal collection or field notes for herps/birds/mammals. IBM compatible. Full program \$100.00. Working demo \$10.00 deductible with purchase. For more info or ordering: Frank Slavens, P.O. Box 30744, Seattle, WA 98103. Ph. 206-542-6751. Fax 206-546-2912.

Next Meeting: Thursday, 6 April 1995 at 7:00 pm in room 212 of the University of Utah's Biology building. **Jack Sites** will present a talk entitled "*Sceloporus* as a Model System for Ecological and Evolutionary Studies." After the talk there will be a drawing for the book *Understanding Reptile Parasites*. This month's raffle will be for a captive born Russian rat snake and a captive born California kingsnake. The rat snake was donated by Stan Draper and the kingsnake by Jim Larsen (his second raffle donation!). Tickets will cost \$1 each and you may purchase as many as you like. Both snakes will be given away separately, but each ticket will be for both.

Don't forget the Education Committee's meeting on basic herp care at BYU on the 25th of March. See Announcements section for more details.



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